

August 18, 2015

Tom Moe
USS Corporation
P.O. Box 417
Mountain Iron, MN 55768

RE: Project: NPDES-LINE 3 Wkly
Pace Project No.: 1251575

Dear Tom Moe:

Enclosed are the analytical results for sample(s) received by the laboratory on August 12, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Melisa M Woods
melisa.woods@pacelabs.com
Project Manager

Enclosures

cc: Terri Sabetti, Northeast Technical



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: NPDES-LINE 3 Wkly

Pace Project No.: 1251575

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Alaska Certification #MN01084

Arizona Department of Health Certification #AZ0785

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification # : 998027470

WA Department of Ecology Lab ID# C1007

Nevada DNR #MN010842015-1

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SAMPLE SUMMARY

Project: NPDES-LINE 3 Wkly

Pace Project No.: 1251575

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1251575001	WS-002 Scrubber Make-Up	Water	08/12/15 08:45	08/12/15 14:20
1251575002	WS-003 Thickner Overflow	Water	08/12/15 08:45	08/12/15 14:20

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SAMPLE ANALYTE COUNT

Project: NPDES-LINE 3 Wkly

Pace Project No.: 1251575

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1251575001	WS-002 Scrubber Make-Up	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	CSD	1	PASI-V
1251575002	WS-003 Thickner Overflow	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	CSD	1	PASI-V

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ANALYTICAL RESULTS

Project: NPDES-LINE 3 Wkly

Pace Project No.: 1251575

Sample: WS-002 Scrubber Make-Up		Lab ID: 1251575001		Collected: 08/12/15 08:45		Received: 08/12/15 14:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Calcium, Dissolved	84.2	mg/L	5.0	0.29	10	08/13/15 13:42	08/14/15 12:54	7440-70-2	
Magnesium, Dissolved	184	mg/L	5.0	0.67	10	08/13/15 13:42	08/14/15 12:54	7439-95-4	
Total Hardness, Dissolved	967	mg/L	100	50.0	10	08/13/15 13:42	08/14/15 12:54		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	730	mg/L	20.0	0.89	10		08/14/15 09:59	14808-79-8	

Sample: WS-003 Thickner Overflow		Lab ID: 1251575002		Collected: 08/12/15 08:45		Received: 08/12/15 14:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Calcium, Dissolved	737	mg/L	5.0	0.29	10	08/13/15 13:42	08/14/15 12:57	7440-70-2	
Magnesium, Dissolved	160	mg/L	5.0	0.67	10	08/13/15 13:42	08/14/15 12:57	7439-95-4	
Total Hardness, Dissolved	2500	mg/L	100	50.0	10	08/13/15 13:42	08/14/15 12:57		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	1810	mg/L	40.0	1.8	20		08/14/15 10:21	14808-79-8	

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QUALITY CONTROL DATA

Project: NPDES-LINE 3 Wkly

Pace Project No.: 1251575

QC Batch: MPRP/5690

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 MET Dissolved

Associated Lab Samples: 1251575001, 1251575002

METHOD BLANK: 237610

Matrix: Water

Associated Lab Samples: 1251575001, 1251575002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	08/14/15 11:38	
Magnesium, Dissolved	mg/L	ND	0.50	08/14/15 11:38	

LABORATORY CONTROL SAMPLE: 237611

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	51.2	102	85-115	
Magnesium, Dissolved	mg/L	50	50.2	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 237612

237613

Parameter	Units	1251489001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	2.8	50	50	53.4	53.7	101	102	70-130	1	20	
Magnesium, Dissolved	mg/L	1.0	50	50	50.7	51.9	99	102	70-130	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 237614

237615

Parameter	Units	1251531001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	36.0	50	50	87.9	86.9	104	102	70-130	1	20	
Magnesium, Dissolved	mg/L	56.1	50	50	106	104	99	96	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: NPDES-LINE 3 Wkly

Pace Project No.: 1251575

QC Batch: WETA/13216

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 1251575001, 1251575002

METHOD BLANK: 237977

Matrix: Water

Associated Lab Samples: 1251575001, 1251575002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	08/14/15 08:10	

LABORATORY CONTROL SAMPLE: 237978

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	46.7	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 237979 237980

Parameter	Units	1251573001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	154	100	100	254	256	99	102	90-110	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: NPDES-LINE 3 Wkly

Pace Project No.: 1251575

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-V Pace Analytical Services - Virginia

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NPDES-LINE 3 Wkly

Pace Project No.: 1251575

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1251575001	WS-002 Scrubber Make-Up	EPA 200.7	MPRP/5690	EPA 200.7	ICP/4487
1251575002	WS-003 Thickner Overflow	EPA 200.7	MPRP/5690	EPA 200.7	ICP/4487
1251575001	WS-002 Scrubber Make-Up	EPA 300.0	WETA/13216		
1251575002	WS-003 Thickner Overflow	EPA 300.0	WETA/13216		

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CHAIN-OF-CUSTODY / Analytical Request
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed.

Section A
Required Client Information:

Company: USS Corporation
Address: P.O. Box 417
Mt. Iron, MN 55769
Email:
Phone:
Requested Due Date:

Section B
Required Project Information:

Report To: Tom Moe
Copy To:
Purchase Order #:
Project Name: NPDES-LINE 3 Wky
Project #:

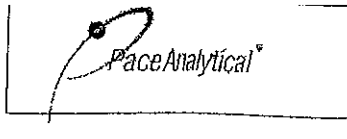
Section C
Invoice Information:

Attention:
Company Name:
Address:
Phone:
Fax:
Requested Due Date:

MO# 1251575
P.O. # 1251575
CLIENT: USS CORP
Due Date: 08/26/05
State Location:
Regulatory Agency:
Requested Analysis:
Residual Chlorine (Y/N):
TEMP in C:
Received on ice (Y/N):
Custody Sealed Cooler (Y/N):
Samples Intact (Y/N):

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 /, -) Sample IDs must be unique	MATRIX Drinking Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P SL OL WP AR OT TS	COLLECTED		START		END		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analyses Test	Y/N	Residual Chlorine (Y/N)	LF,LF	LF,LF	001	002																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
				DATE	TIME	DATE	TIME	Unpreserved	H2SO4			HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	LAB FILTERED: SO4	LAB FILTERED: Ca,Mg,Hard																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
1	WS-002 Scrubber Make-Up			WT	8-11-05	08:45	8-12-05	08:45																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Paul Moe
SIGNATURE of SAMPLER: Paul Moe
DATE Signed: 8-12-05

	Document Name:	Document Revised: 23Feb2015
	Sample Condition Upon Receipt Form	Page 1 of 1
	Document No.: F-VM-C-001-Rev.09	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition
Upon Receipt

Client Name:

Project #:

Courier:

☐ Fed Ex ☐ UPS ☐ USPS ☒ Client
☐ Commercial ☐ Pace ☐ Other:

Tracking Number:



Custody Seal on Cooler/Box Present?

☐ Yes ☒ No

Seals Intact?

☐ Yes ☒ No

Optional: Proj. Due Date:

Proj. Name:

Packing Material:

☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: Hazard

Temp Blank?

☒ Yes ☐ No

Thermometer Used:

☒ 140792808

Type of Ice:

☒ Wet ☐ Blue ☐ None

☒ Samples on ice, cooling process has begun

Cooler Temp Read °C:

4.3

Cooler Temp Corrected °C:

4.6

Biological Tissue Frozen?

☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C

Correction Factor: 1.3

Date and Initials of Person Examining Contents:

8-12-15

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix:	<u>WT</u>	
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

CLIENT NOTIFICATION/RESOLUTION

Person Contacted:

Date/Time:

Field Data Required?

☐ Yes ☐ No

Comments/Resolution:

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review:

LTP for H2

Date:

8-13-15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)